I CLAIM:

1. A method of operating a gas turbine engine upon the occurrence of an offload condition, the method comprising the steps of:

a) creating a table of minimum fuel flow rates that will not cause blowout using rotational speed and inlet temperature as the table parameters;

b) creating a function to determine a fuel valve position based on a fuel flow rate accessed from the table;

c) defining a variance from synchronous speed;

d) placing a load on a turbine drive shaft;

e) accelerating the turbine drive shaft to synchronous speed;

f) removing the load from the turbine drive shaft;

g) detecting the removal of the load from the turbine drive shaft;

h) enabling a control system;

i) determining if the current speed of the turbine drive shaft is within the predefined variance;

j) exiting the control system if the current speed is within the predefined variance;

k) enabling a PID controller within the control system;

l) requesting a speed for the turbine drive shaft by the control system;

m) requesting a fuel valve position by the control system based on the requested speed through the PID controller;

n) requesting a fuel flow rate from the table by the control system;

o) requesting a fuel valve position through the function by the control system;

p) positioning the fuel valve according to the fuel valve position requested through the PID controller if the requested position does not allow less fuel to the combustion chamber than the fuel valve position requested through the function;

q) positioning the fuel valve according to the fuel valve position requested through the function if the fuel valve position requested through the PID controller allows less fuel through to the combustion chamber than the fuel valve position requested through the function;

r) turning on an ignitor if the fuel valve position used was requested through the function;

s) maintaining the burning of the ignitor until the fuel valve position used is requested through the PID controller;

t) turning off the ignitor if the fuel valve position used is requested through the PID controller;

u) maintaining the ignitor in an off position until the fuel valve position used is requested through the function; and

v) repeating steps (i) – (u) until synchronous speed is reached.

2. A method of operating a gas turbine engine upon the occurrence of an offload condition, comprising the steps of:

a) removing a load from a turbine drive shaft;

b) enabling a controller within a control system to control the acceleration of the turbine drive shaft;

c) requesting a speed for the turbine drive shaft and a fuel valve position by the control system based on the requested speed through the controller;

d) requesting a fuel flow rate by the control system that allows the least amount of fuel into a combustion chamber of the gas turbine engine without causing blowout;

e) requesting a fuel valve position through a function by the control system based on the requested fuel flow rate that allows the least amount of fuel into a combustion chamber of the gas turbine engine without causing blowout; and

f) positioning the fuel valve according to the fuel valve position requested through the controller if the requested position does not allow less fuel to the combustion chamber than the fuel valve position requested through the function.

3. The method as claimed in claim 2, further comprising the step of positioning the fuel valve according to the fuel valve position requested through the function if the fuel valve position requested through the controller allows less fuel through to the combustion chamber than the fuel valve position requested through the function.

4. The method as claimed in claim 3, further comprising the step of turning on an ignitor if the fuel valve position used was requested through the function.

5. The method as claimed in claim 4, further comprising the step of maintaining burning of the ignitor until the fuel valve position used is requested through the controller.

6. The method as claimed in claim 5, further comprising the step of turning off an ignitor if the fuel valve position used is requested through the controller.

7. The method as claimed in claim 2, further comprising the step of turning off an ignitor if the fuel valve position used is requested through the controller.

8. The method as claimed in claim 6, further comprising the step of maintaining the ignitor in an off position until the fuel valve position used is requested through the function.

9. The method as claimed in claim 7, further comprising the step of maintaining the ignitor in an off position until the fuel valve position used is requested through the function.

10. The method as claimed in claim 2, further comprising the step of defining a variance from synchronous speed of the turbine drive shaft.

11. The method as claimed in claim 10, further comprising the steps of determining if a current speed of the turbine drive shaft is within the predefined variance and exiting the control system if the current speed is within the predefined variance.

12. The method as claimed in claim 2, further comprising the steps of creating a table of minimum fuel flow rates that will not cause blowout using rotational speed and inlet temperature as the table parameters and creating a function to determine a fuel valve position based on a fuel flow rate accessed from the table.

13. The method as claimed in claim 12, wherein the step of requesting a fuel flow rate is based from the table of minimum fuel flow rates.

14. The method as claimed in claim 2, further comprising the step of detecting the removal of the load from the turbine drive shaft.

15. The method as claimed in claim 2, further comprising the steps of accelerating the turbine drive shaft having a load to synchronous speed before the step of removing the load from the turbine drive shaft.